News and Views

A Founder of the Institution of Electrical Engineers

ON September 5 occurs the centenary of the birth of Major-General Charles Edmund Webber, who in 1871, with Colonel Sir Francis John Bolton (1831–87), was instrumental in founding the Society of Telegraph Engineers and Electricians, since 1889 the Institution of Electrical Engineers. Webber, who was the son of an Irish clergyman, passed through Woolwich Academy and in 1855 received a commission in the Royal Engineers. After service in India, he became an instructor in military surveying at Woolwich, and in 1866 was attached to the Prussian Army to report on engineering operations and military telegraphs. His knowledge of the latter led to his being lent to the British Post Office in connexion with the organization of the telegraph service, and it was while engaged on this service in 1871 that with Bolton he founded the Society of Telegraph Engineers, of which Sir William Siemens became the first president. Bolton was for some time the honorary secretary, while Webber was elected to the presidential chair in 1882. He had just previously, in 1879–80, been through the Zulu War, and in 1881 had served as British Commissioner at the Electrical Exhibition. In 1882 and 1884 he again saw active service, this time in Egypt, and in 1885 retired from the army with the rank of major-general. He was afterwards connected with several electricity supply undertakings and was elected a member of the Institution of Civil Engineers, being, it is said, the first military officer to qualify for election. He died at Margate on September 23, 1904.

Protection from Air Raids

THE scheme of air raid protection prepared by a committee of scientific workers, including Profs. J. B. S. Haldane, J. R. Marrack and J. B. Bernal, working in conjunction with engineers and medical men, and recently submitted to the Home Office, presents what may be regarded as a scientific and technical view of the best preparation against the eventuality of air raids. The scheme, which is also being placed before the L.C.C. and all the London Borough Councils, has been prepared at the instance of the Science Commission of the International Peace Campaign and might with advantage be studied by all who take an interest in this matter. Because it combines an important strategic centre containing three main line railway termini, a better-class residential district with many open spaces, and a densely packed working-class area, the Borough of St. Pancras was chosen as typical of the conditions to be dealt with and has been made the basis of a typical scheme worked out in broad details. Experience in Spain and China shows that air raids now are of a very different character from those of the Great War and that the civilian population has become a definite objective. The scheme is based on the assumption that all four types of attack—machine guns, gas, incendiary bombs, and high explosive bombs—may be used either separately or in conjunction, and figures are quoted as to the destructive and penetrative powers of these weapons.

THE Commission proposes the evacuation to the country of children up to fourteen years of age, the mothers of infants, people over seventy years of age and the sick and infirm. For the rest of the population shelters are proposed, and these take the form of tunnels in the London clay 50 ft. below the surface, of inverted U section and lined with steel sheeting. In the design of these, provision has been made for every necessity which it is possible to foresee. Some of the suggestions made deserve consideration on the broader ground of their intrinsic value in times of peace; for example, that hospitals should now be built in the country, and that school camps be prepared for children of school age. Such a scheme as is here proposed is necessarily of a tentative nature, but the work of the Committee has reached the stage at which its publication is of value to the public and the details of the scheme are sufficiently clear-cut to stimulate criticism, suggestion and discussion which will lead to modifications and improvements. Copies of the memorandum can be obtained (price 3*d*.) from F. J. Sander, 85 Beechwood Road, Sanderstead, Surrey.

Radcliffe Observatory, Pretoria

NEWS has recently been received from the Corning Glass Co. that it has been successful in the third attempt to make a Pyrex disk for the 74-in. reflector of the new Radcliffe Observatory, Pretoria. The glass is now being shipped to Newcastle, where grinding and polishing will be commenced immediately by Sir Howard Grubb, Parsons and Co. Meanwhile, work on the site at Pretoria is proceeding satisfactorily, and erection of the turret and the telescope mounting should be completed by the end of this month. The turret steelwork is all assembled, including the shutters, and the outer sheeting has been fixed in position. The telescope itself is practically entirely erected, despite some difficulty which was encountered in procuring lifting tackle sufficient for handling the heavier parts, especially for the polar axis, which when fitted with its circles, etc., weighs 16 tons. The tasks now remaining are concerned chiefly with the electrical equipment. Subsidiary apparatus, all of new design, is still under construction in Great Britain. A measuring machine for spectrograms has been finished and has passed thorough tests, a microphotometer is near completion, and work is in active progress on a Cassegrain spectrograph. Dr. T. Dunham, jun., of the Mount Wilson Observatory, is preparing plans in conjunction with the Radcliffe

staff for a large spectrograph of very advanced design, which it is hoped will be installed at the coudé focus very soon after the new reflector comes into operation.

Biblical Botany at the Hebrew University

STUDY of the flowers of the Bible has just been introduced to the Hebrew University at Jerusalem as a subject for students, who are showing considerable enthusiasm for it. Coupled with biblical botany is the study of Jewish and Arab plant-lore. Dr. Ephraim Hareubani is the lecturer, and he brings to his task thirty years of research into the flowers and plants mentioned in holy scripts. Together with his wife, also a botanist, he has collected almost all the specimens named and, using Mrs. Hareubani's own methods of preservation, has placed the whole collection in the University's Museum of Biblical Botany. He has identified and classified all the plants of ancient Palestine, Syria and Babylon mentioned in the Bible, the Hebrew Talmud and later Jewish writings. A conspicuous feature of the Museum of Biblical Botany is the fresh-looking appearance of the permanent exhibits which, without pressing or bathing in liquids, seem as though they have just been plucked, and retain their original colour and greenness of stalk. They are displayed in their natural groups in sealed cupboards. Among the many curious plants may be mentioned a species of *Capparis*. This blooms, matures and dies in a single day, and, by the exercise of considerable patience and vigilance, Dr. Hareubani has been able to show it in a series of half-hourly stages of growth.

STUDY of botany on a scientific plane was first begun in Palestine by Dr. Alexander Eig, late director of the Department of Botany at the Hebrew University. His researches, from 1921 onwards, led him to Syria, Turkey, Kurdistan and the desert tracts, and he built up a comprehensive collection of Near Eastern flora. The Palestine plants he classified according to the geographical and climatological types of the world groups (the country comprises two different floral regions), and he published a remarkably detailed phytogeographic map of Palestine. According to Faba Turovlin, broadcasting from the Jerusalem wireless station, "by following Dr. Eig's observations on the subject, the character of any particular district in Palestine may often be learned from the study of its plants, and in some cases from the occurrence of a single plant only". There is now periodically published a *Palestine Journal of Botany*.

Excavation of a Hill Fort in Sussex

THE hill fort or camp at Mount Caburn, near Lewes, which is under excavation by the Brighton and Hove Archæological Society, continues to yield interesting results. The investigations have now revealed the character and constructional history of the ramparts in some detail. According to a report on recent work (*The Times*, August 25), excavations in the upper rampart show that, when first constructed, it was retained by a line of posts and a net palisade. A channel in the chalk indicates the line of the palisade. The second stage of the outer rampart, which covered the final period of occupation of the camp, is indicated by the fact that the original rampart was reinforced by a mixture of chalk and black mould. Post holes show that the rampart was further strengthened by fresh timbering. On the south side of the gateway a long cut has shown that the inner ditch had been filled up by the slipping of the inner rampart. Occupation floors of huts are clearly evident. There is no trace of occupation during the neolithic period, but a small piece of bronze has been found.

Archæology and the Unemployed at Oxford

OXFORD, like the Irish States (see NATURE of June 11, p. 1041), has made use of measures for the relief of unemployment to further archæological studies. Voluntary labour from the Oxford and Wales camps of the Universities Council for Unemployed Camps has carried out excavations on Farington Clump during two seasons, proving it to be the site of the Adulterine Castles raised by Robert of Gloucester against King Stephen. In 1937, excavations were begun on a Romano-British and early Saxon cemetery site at Frilford. Here, under the direction of Dr. L. H. Dudley Buxton, members of a camp near Eynsham, consisting of ninety men from South Wales and twenty-five university men, worked daily on the Romano-British area. They located six graves and established the north-western limits of the cemetery. A hoard of thirty coins made it possible to date the site with some precision. The Saxon area is of special interest, as it is one of the sites, rare in Britain, which was in continuous occupation during the period of Saxon penetration. Excavations are being continued at Frilford and on a site in the north of England. The men, some of whom have been out of work for years, showed a ready response, both technically and intellectually, to archæological training, and their interest in the results was keen. The three weeks in camp produced a marked improvement in physique. Funds for the continuation of this work are urgently needed, especially as the applications from clubs for the unemployed are increasing. Contributions may be sent to the treasurer of the appeal, Mr. J. Kelly, 16 Charlbury Road, Oxford.

Insulin Treatment of Diabetes

PROF. CHARLES BEST, of Toronto, delivered the twelfth Stephen Paget Memorial Lecture at the annual general meeting of the Research Defence Society on June 9 (*The Fight against Disease*, **26**, No. 3; 1938). Prof. Best is the co-discoverer, with Prof. Banting, of the anti-diabetic substance known as 'insulin', now universally used for the treatment of the disease, and the subject of his lecture was "Insulin and Diabetes: The Present Position". The stages in the discovery and preparation of insulin were first outlined, and Prof. Best then described recent modifications—protamine- and protamine-zinc insulins—by the use of which the effect of the dose is prolonged. He next discussed the influence of insulin